

CLAIMS

1. A hydrogenated copolymer-containing laminate comprising:

5 a substrate layer comprising a fibrous material,  
an adhesive layer, and

a hydrogenated copolymer composition layer which  
is laminated on and bonded to said substrate layer  
through said adhesive layer,

10 said hydrogenated copolymer composition layer comprising:

10 to 90 parts by weight of a hydrogenated copolymer (I), and

90 to 10 parts by weight of a rubbery polymer (II)  
15 exclusive of said hydrogenated copolymer (I),

the total of said hydrogenated copolymer (I) and  
said rubbery polymer (II) being 100 parts by weight,

wherein said hydrogenated copolymer (I) is obtained by hydrogenating a copolymer comprising conjugated diene monomer units and vinyl aromatic monomer units, a part of said vinyl aromatic monomer units optionally forming at least one vinyl aromatic polymer block (A),  
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said hydrogenated copolymer (I) having the following characteristics (1) to (4):  
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(1) a vinyl aromatic monomer unit content of from more than 50 % by weight to 90 % by weight, based on the weight of said hydrogenated copolymer (I),

5 (2) a content of said vinyl aromatic polymer block (A) of not more than 40 % by weight, based on the weight of said hydrogenated copolymer (I),

(3) a weight average molecular weight of from 50,000 to 1,000,000, and

10 (4) a hydrogenation ratio of 70 % or more, as measured with respect to the double bonds in said conjugated diene monomer units.

2. The laminate according to claim 1, wherein said hydrogenated copolymer (I) has at least one glass transition temperature in the range of from -25 °C to 80 °C, and

said rubbery polymer (II) is at least one polymer selected from the group consisting of:

20 (II-1) an unhydrogenated block copolymer comprising conjugated diene monomer units and vinyl aromatic monomer units, said unhydrogenated block copolymer having at least one glass transition temperature in the range of from -80 °C to lower than -25 °C,

25 (II-2) a conjugated diene homopolymer having at least one glass transition temperature in the range of

from -80 °C to lower than -25 °C, or a hydrogenation product thereof,

5 (II-3) a hydrogenated copolymer obtained by hydrogenating a random or block copolymer comprising conjugated diene monomer units and vinyl aromatic monomer units, said hydrogenated copolymer having a vinyl aromatic monomer unit content of 50 % by weight or less, based on the weight of said hydrogenated copolymer, and at least one glass transition temperature in the range  
10 of from -80 °C to lower than -25 °C,

(II-4) a block copolymer consisting of at least one vinyl aromatic homopolymer block having a weight average molecular weight of from 2,500 to 40,000, and at least one isoprene homopolymer block having a vinyl  
15 bond content of 40 % or more, or a hydrogenation product thereof, wherein said at least one vinyl aromatic homopolymer block and said at least one isoprene homopolymer block are arranged in any order,

said block copolymer (II-4) having a vinyl aromatic monomer unit content of 50 % by weight or less,  
20 based on the weight of said block copolymer (II-4), a weight average molecular weight of from 20,000 to 200,000 and at least one glass transition temperature in the range of from -25 °C to 20 °C, and

25 (II-5) a rubbery olefin polymer having at least

one glass transition temperature in the range of from  
-80 °C to lower than -25 °C,

5 wherein said glass transition temperature of each  
of said polymers (I) and (II-1) to (II-5) is a tempera-  
ture at which a peak of loss tangent ( $\tan\delta$ ) is observed  
in a dynamic viscoelastic spectrum of the polymer.

3. The laminate according to claim 1 or 2, wherein  
said hydrogenated copolymer (I) has at least one sub-  
10 stituent having at least one functional group selected  
from the group consisting of a hydroxyl group, an epoxy  
group, an amino group, a carboxyl group, an acid anhy-  
dride group, a silanol group and an alkoxysilane group.

15 4. The laminate according to any one of claims 1 to  
3, wherein said adhesive layer comprises:

100 parts by weight of a modified conjugated diene  
polymer (i) having bonded thereto at least one sub-  
stituent having at least one functional group selected  
20 from the group consisting of a hydroxyl group, an epoxy  
group, an amino group, a carboxyl group, an acid anhy-  
dride group, a silanol group and an alkoxysilane group;  
and

at least one reactive substance (ii) selected from  
25 the group consisting of:

13 to 95 parts by weight of a composition (ii-1) comprising:

10 to 60 parts by weight of a polyol having 3 or more hydroxyl groups,

5 3 to 30 parts by weight of a diisocyanate, and  
0 to 5 parts by weight of a diol; and

0.1 to 20 parts by weight of a compound (ii-2) having at least 2 functional groups which are reactive to said functional group of said modified conjugated diene polymer (i), with the proviso that, when the functional group of the substituent bonded to the modified conjugated diene polymer (i) is other than an acid anhydride group, said compound (ii-2) has at least 3 functional groups which are reactive to said functional group of said modified conjugated diene polymer (i).

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5. The laminate according to claim 4, wherein said adhesive layer comprises said composition (ii-1) as reactive substance (ii), and is obtained by a method comprising:

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(1) mixing 10 to 60 parts by weight of a polyol having 3 or more hydroxyl groups with 100 parts by weight of a modified conjugated diene polymer (i) having bonded thereto at least one substituent having at least one functional group selected from the group con-

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sisting of a hydroxyl group, an epoxy group, an amino group, a carboxyl group, an acid anhydride group, a silanol group and an alkoxysilane group, to thereby obtain a mixture;

5           (2) reacting the mixture obtained in step (1) with 3 to 30 parts by weight of a diisocyanate to obtain a reaction mixture; optionally

          (3) reacting the reaction mixture obtained in step (2) with up to 5 parts by weight of a diol to obtain a  
10 reaction mixture; and

          (4) applying the reaction mixture obtained in step (2) or (3) to a substrate comprising a fibrous material.

6. The laminate according to any one of claims 1 to 5,  
15 wherein said fibrous material is at least one member selected from the group consisting of a synthetic fiber, a natural fiber, a regenerated fiber and a multicomponent fiber.

20 7. The laminate according to any one of claims 1 to 6, wherein at least a part of said hydrogenated copolymer composition layer is foamed.

25 8. The laminate according to any one of claims 1 to 7, which is a surface material of a furniture.

9. The laminate according to any one of claims 1 to 7,  
which is an interior part of a vehicle.

5 10. The laminate according to any one of claims 1 to 7,  
which is a shoe upper.

11. The laminate according to any one of claims 1 to 7,  
which is a part of a bag.

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12. The laminate according to any one of claims 1 to 7,  
which is a building material.